

CASE
OF
L A R Y N G I T I S,
ACCOMPANIED BY
THE FORMATION OF A FALSE MEMBRANE IN THE
TRACHEA AND BRONCHI,
IN WHICH THE OPERATION OF TRACHEOTOMY WAS
PERFORMED.

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M. A. B., ætat. 22, a single woman, of irregular habits, five months advanced in pregnancy, came under my care, in St. Thomas's Hospital, on the 5th of January 1847.

After three months of delicate health, she had been suddenly attacked, nine months before her admission into the hospital, with slight febrile symptoms, accompanied by cough, tightness across the chest, hoarseness, and loss of voice. These symptoms were rather severe for a few days, and then declined, but had never ceased altogether. There had been no difficulty of deglutition during the first six months of her illness, but she had suffered, more or less, from that symptom for the last three months: latterly, however, it had been very slight. From the first there had been pain between the shoulder blades. She had been losing flesh for many months, and the emaciation, slight at first, had lately been rapid.

When admitted into the hospital her voice was hoarse, and she could scarcely speak above a whisper. The larynx was slightly tender on pressure, and she complained of a little difficulty and pain in deglutition; but as there was much nervous excitement, disposition to hysteria, and tenderness on pressure of almost every part of the body, it was impossible to determine how far these symptoms were dependent on chronic inflammation of the larynx. The fauces were red, but not swollen. The tongue was white, the skin moist, the bowels costive, the appetite bad, the pulse small and feeble.

The chest expanded well at each inspiration: and there was equal resonance on percussing the corresponding parts on either side. Beneath each clavicle the respiratory murmur was very loud and harsh; and, on the right side, it was almost as loud and harsh during expiration as during inspiration. There was constant cough, with copious frothy expectoration.

I believed the case to be phthisis, in its earliest stage, commencing on the right side. For reasons already stated, it did not appear certain that the larynx was affected; the patient's own account leading me to suppose that any disease, which might have existed in this organ, had declined or ceased altogether, and that, at all events, any existing disease was very slight and not progressing. Under these circumstances, I ordered sulphate of iron and quinine, and during two days the patient was better: but, on the 7th, the hoarseness, difficulty of deglutition, and tenderness of the larynx, having increased, these medicines were discontinued; a small blister was applied under the angle of each jaw; and iodide of potassium was ordered. These measures relieved her greatly. Slight bronchitis supervened in two days, but disappeared under the use of small doses of tartar emetic; and, on the 13th, she appeared much better in all respects than when she was admitted into the hospital.

On the 14th, the tenderness of the larynx having again increased suddenly, blisters were applied in the same situation

as before. She passed a restless night ; and, on the following morning, as soon as I entered the ward, it was evident to me that an unfavourable change had taken place. The inspirations were long, stridulous, and consisted of a series of convulsive efforts ; the cough was harsh, shrill, and abortive ; and the voice was almost lost. The shoulders were raised, and the efforts at each inspiration were violent. The countenance was anxious, the face flushed, the lips livid, and the veins of the neck distended. There was copious expectoration of tenacious, frothy mucus. The chest was perfectly resonant on percussion, but no breath-sounds could be heard when the ear was applied to the chest.

I immediately decided upon having the trachea opened ; and the operation was performed by Mr. Benjamin Travers, jun. The patient's neck being thin and long, no difficulty was anticipated in the performance of the operation ; but the necessity of keeping her in an almost erect position, the constant and rapid movements of the larynx, and profuse hæmorrhage from the distended veins of the neck, were obstacles which rendered the operation long and difficult. The cricoid cartilage was divided, vertically, in the mesial line, and the uppermost ring of the trachea was also cut. No relief was given by the simple incision which had been made ; and prolonging the incision, cutting out a portion of the trachea, keeping the edges of the wound separated by forceps, &c., only increased the distress of the patient. The veins of the face and neck became very turgid ; the face was blanched, the mouth gaping, the pulse imperceptible ; the efforts at inspiration, which had been most violent, though abortive, ceased altogether, and she was apparently dead. Mr. Mackmurdo now introduced his finger into the orifice, rapidly passing it upwards and downwards ; at the same moment cold water was dashed in the face ; a deep inspiration was made, and with the succeeding expiration a large clot of blood was forced out of the wound.

The respiration through the wound immediately became

quite free, and in the course of a few minutes she was completely restored; the countenance resumed its natural appearance, and, with the exception of exhaustion, she made no complaint.

Mixed with the blood, which was forced through the opening at the first expiration, was a whitish, tubular, membranous matter, about three-quarters of an inch long, and large enough to surround the little finger. It had all the appearance of fibrin; and was found to consist of minutely granular matter, with some appearance of fibres.

I think it probable, that this piece of fibrin had been formed in the larynx, at the point where the incision was made; that it had been pushed downwards by the knife, when the opening was made in the trachea; and that, together with the small quantity of blood which entered the trachea through the wound, it had blocked up the tube, until the passage was cleared by Mr. Mackmurdo. For four days after the operation she was much easier. She breathed freely through the opening, which it was necessary to clear of mucus frequently, as the secretion was tenacious, and she was unable to cough with sufficient force to expel it. The chest remained resonant on percussion, in every part; but no respiratory murmur, rhonchus, sibilus, or crackling, could be heard. Indeed, on applying the ear to the chest, it might have been supposed that no air entered the lungs. Believing that this absence of breath-sounds, whilst the chest was perfectly resonant, and freely expanded at each inspiration, depended on fibrinous exudation formed in, and adherent to, the bronchial membrane, I ordered five grains of hydrargyrum cum cretâ every four hours; and one drachm of unguentum hydrargyri fortius to be rubbed in each axilla twice daily. She was allowed light nourishing diet, and a glass of wine.

On the 19th, four days after the operation, the breathing suddenly became embarrassed, and blood issued from the wound in such quantity as to threaten death by suffocation.

She appeared, a second time, to have ceased to exist; when Mr. Travers, who had been sent for on the occurrence of the bleeding, cleared all obstruction from the opening and trachea, dashed cold water in her face, applied stimulating friction to the chest, and, by these means, succeeded in once more snatching his patient from the brink of death. On examining the matters which had been removed from the trachea, one portion, when unravelled, appeared to be a fibrinous cast of the bronchial tubes. It was arborescent, dividing and subdividing, like the bronchi; the largest part was about the size of a crow's quill, and the smallest was not more than half a line thick.

The next day the gums were rather sore: she again expectorated some shreddy fibrinous matter, which was neither tubular nor arborescent.

She now suffered from exhaustion,—caused by loss of blood, insufficient nourishment, the constant fatigue of having tenacious secretion removed from the orifice, and want of sleep. She could swallow without much difficulty, but had no appetite; and a trachea tube caused so much irritation, that it could not be worn. On the nights of the 22nd and 23rd, an opiate was given, which procured refreshing sleep. On the 24th, eight ounces of blood were lost from the wound, but there was no danger of suffocation. Acetate of lead was given, and no great hæmorrhage took place afterwards.

On the day when this second hæmorrhage occurred, the chest was again examined carefully, and it was then found that the breath-sounds could be heard everywhere except in the lower lobe of the right lung, where they were inaudible; and over the same part there was little resonance on percussion. The left side of the chest appeared tolerably healthy; but at the upper part of the right lung, the respiratory murmurs, both on inspiration and expiration, had become much harsher than when they were last heard, and, in some places, there was more dulness on percussion than at the corresponding parts of the left side.

It may here be noticed, that before the mercury (which

was gradually diminished, and in a few days afterwards omitted altogether) was discontinued, the lower part of the right lung appeared to have become almost as permeable by air as the left. From this I infer that it had been rendered solid either by blood gravitating to that part, or by inflammation, and that the blood or fibrin had been absorbed subsequently. On the 5th of February, she had an attack of bronchitis, which was relieved by antimony.

By the 15th, the orifice in the neck, which had been gradually closing, was scarcely perceptible, and she had for some days breathed and expectorated by the mouth. On the 18th, the opening had entirely closed, and the voice, though only a hoarse whisper, was distinct. From this period, there was not at any time the slightest impediment to the free passage of air through the larynx and trachea; and, for a few days, she appeared better, and more comfortable. She soon, however, became worse; the cough was constant and harrassing, the expectoration copious; her nights were restless; her appetite was almost lost, and the little nourishment taken was not retained on the stomach. On February 28th, after a very restless night, she died from exhaustion; the breathing remaining free to the last moment.

Examination, post-mortem.—The whole of the mucous membrane of the larynx, and of the upper rings of the trachea, was destroyed by ulceration; the parts were not thickened or swollen, and the passage for air was not in any part contracted. Although the external wound was closed, the incision through the cartilages had not healed. The bronchial membrane was red; but not the slightest trace of fibrinous exudation could be discovered in any part of the tubes. The lungs were crepitant, and slightly congested at the posterior part.

The right lung, especially in the upper lobe, contained many clusters of tubercles; and the lung, between the tubercles, was hepatized, so as to form numerous solid masses, varying in size from a hazel nut to a pigeon's egg. The left

lung was similarly diseased, but to a much less extent; the clusters of tubercles being smaller and less numerous. The liver was rather large, and the hepatic vein was congested. The other viscera were healthy.

Remarks.—Although this case terminated fatally, the *operation of tracheotomy* can scarcely be said to have been unsuccessful, when it is considered that the patient survived six weeks, whilst, without the operation, she must have died in less than the same number of hours; and that death, when it did take place, was neither brought about, directly or indirectly, nor in any way hastened, by the opening made in the trachea.

So many successful cases of tracheotomy have been recorded, that I should not have occupied the time of the Society with that which has been read, if it did not appear to be a good example of the benefit to be expected from the operation, even under apparently unfavourable circumstances, provided it be resorted to at an early period; that is, so soon as it is discovered that an impediment exists to the passage of air through the larynx sufficient to cause the circulation of venous blood in the arterial system.

In the case now under consideration, it is evident, notwithstanding the distressing nature of the symptoms, immediately prior to the operation, that the poisoning of the system by venous blood had not proceeded to any great extent; since all appearances of such being the case disappeared very speedily after the air was able to enter the trachea through the opening made in that tube. But, with this single exception, all other circumstances appeared to be most unfavourable, as regarded the success of the operation. The opening was made in a part of the trachea which was probably ulcerated at the time of the operation; and from that, or some other cause, the mucous membrane was in such a state that the irritation of a tube

could not be borne for a moment, — a most unfortunate circumstance, both at the time of the operation and during the progress of the case. The ulceration of the larynx and trachea was also complicated with the effusion of a false membrane at the place where the opening was made; and it is highly probable that, at the same time, there was extensive effusion of fibrin in the bronchial tubes. I consider myself justified in assuming that this fibrinous exudation existed at the time of the operation; since it would otherwise be impossible to account for the entire absence of respiratory sounds in the chest, when there was good resonance on percussion, the day after the operation; and the opinion which I then expressed respecting the cause of this phenomenon was confirmed, a few days afterwards, by the expectoration of a large quantity of fibrin which undoubtedly came from the bronchi. The copious hæmorrhage which took place a few days after the operation; the existence of tubercles in the lungs, though only in early stages, and in small quantity; and the great mental depression under which the patient laboured, arising from causes unconnected with her disease,—were circumstances tending to lessen the chance of life being prolonged for six weeks.

As it was almost certain that tubercles existed in the lungs, and the severe affection of the larynx, demanding an operation, supervened on chronic disease of long standing, I should probably not have given mercury, after tracheotomy had been performed, had it not been for the proof of a form of inflammation having taken place in the air tubes, which was attended by effusion of fibrin. But such being the character of the inflammatory action, I thought that mercury was calculated to relieve it: or rather, that the use of mercury alone offered much chance of arresting an effusion of fibrin, which might soon have completely blocked up the bronchial tubes, and of promoting the discharge of what had been already poured out. The improvement which took place as soon as the mouth was affected was very marked:—the

expectoration became much less tenacious, and the air began to pass more freely into the substance of the lungs.

Note.—I have made no observations on the operation, or on the place at which the opening in the trachea was made, because my friend Mr. Travers, who performed the operation, was so unwell at the time when this paper was written, as to be unable to furnish me with any account of the part he took in the management of the case.